

## MEETING MINUTES (FINAL)

### CITY OF TUCSON HABITAT CONSERVATION PLANS

#### Technical Advisory Committee (TAC)

Wednesday, August 20, 2008, 1:00 – 4:00 p.m.

U.S. Fish & Wildlife Service, Tucson Field Office

201 North Bonita Ave, Suite 141

Tucson, AZ 85745

#### ATTENDEES

#### City of Tucson (COT) Habitat Conservation Plans (HCPs) Technical Advisory Committee (TAC) members present:

Rich Glinski (Arizona Game and Fish Department – *retired*)

Ries Lindley (City of Tucson – Tucson Water Department)

Guy McPherson (University of Arizona – School of Natural Resources)

E. Linwood Smith (EPG, Inc.)

#### Other Attendees present:

Amanda Best (Westland Resources, Inc.)

Jamie Brown (City of Tucson – Office of Conservation and Sustainable Development)

Matt Clark (Defenders of Wildlife)

Cat Crawford (U.S. Fish & Wildlife Service)

Locana de Souza (Arizona Game and Fish Department)

David Jacobs (Arizona Attorney General's Office / Arizona State Land Department)

#### 1. Welcome, introduction, and TAC Charter

#### 2. Review of TAC meeting minutes: July 16, 2008

Technical Advisory Committee (TAC) members approved the minutes with edits from Rich and Guy.

#### 3. Updates

##### Cactus ferruginous pygmy-owl research proposal

Matt Clark, Resource Planning Advisory Committee (RPAC) member representing Defenders of Wildlife, described a cactus ferruginous pygmy-owl (CFPO) research proposal developed by Aaron Flesch, who is currently in Montana for graduate study

Rich complimented Matt on his presentation of the proposal. He then said that he had questions and concerns about it: How would A. Flesch adjust for precipitation data since that is one of the biggest factors relative to CFPO productivity? To measure habitat components now, eight-to-ten years after the initial data gathering of productivity information does not capture conditions during the actual breeding period for which data was gathered. In addition, if the first year's data were excluded, the population would not show a precipitous decline in that area. Rich said that

he disagreed with some of A. Flesch's methods and conclusions in his reports. He said that he disagreed that the CFPO population is in decline as suggested by Aaron, saying that, given the drought, fluctuations are not surprising. Rich said that he does not see the relevance of A. Flesch's proposal and does not know how one can play "catch-up" with the data gathering.

Linwood said that he agreed with Rich's points. He added that he is inclined to think that if A. Flesch's research occurs as outlined in the proposal, this will provide a better understanding of why the Tucson region does not have as many CFPO compared to northern Sonora. However, he said that he did not think that A. Flesch would find anything in northern Sonora that could be replicated in the Tucson region as that would be very difficult.

Jamie said that he will forward any of A. Flesch's responses to the issues raised to the Technical Advisory Committee for further consideration.

#### Adaptive Management materials and preparation for Oct. 1 meeting

Jamie said that this is the meeting where Dennis Kubly of the Bureau of Reclamation will be present to lead discussion on adaptive management. He reported that Rich e-mailed two papers on adaptive management as well as a sheet of hyperlinks to web references, which Jamie forwarded to the TAC. Jamie requested that TAC members read background materials prior to the meeting.

Rich said that adaptive management is a term that takes on different meaning for different people. He said that we are in a high-risk situation with many of these species because they are rare and we don't have very much data. He said that he thinks that Dennis Kubly's work with adaptive management as part of Glen Canyon Dam will be informative. Rich said that the Bureau of Reclamation is very interested in downstream fisheries in terms of dam operations. So they are doing research with water releases and then monitoring different elements to determine what changes to make, if any. They have a strict research and monitoring schedule that feeds back into the operation of the dam. Rich asked that TAC members skim through the references he provided, such as the Department of Interior adaptive management technical guide.

Jamie referenced the preliminary draft Avra Valley HCP monitoring program saying that, at this point, species-specific monitoring is being proposed for burrowing owls. For species dependent on the riparian corridors, it appears from earlier versions of the draft HCP that a combination of orthoimagery and photopoint comparison is recommended along with samples of vegetation structure. He asked if there were any questions for Mr. Kubly related to these examples from the City's draft monitoring program. He mentioned establishing thresholds to indicate if the habitat has changed. Guy added that it is important to be able to attribute that change to management or lack thereof and not something occurring beyond the boundaries of the HCP. Rich brought up the subject of burrowing owls and how there is little or no organization to the number and location of burrowing owls translocated from Phoenix to the Tucson region. He mentioned questions of whether or not the Santa Cruz Valley was a historical breeding location for the burrowing owl or if it developed into one and how important the area may or may not be for migration. Rich said that instead of establishing several 40-acres Burrowing Owl Management Areas (BOMAs), he wondered if would it do more for conservation of the species at the statewide level if the focus were on migration corridors. Some of the research is finding that during migration, burrowing

owls behave differently. He said that we may learn that there is a certain number of burrowing owls in BOMAs and they are producing a certain number of young, but the bigger need is to ensure that migrants survive on their way south. This would shift emphasis away from creating BOMAs and into creating or enhancing other habitat elements. So, Rich said that it is important to determine what we look at, what we measure, and at what threshold we will modify our approach to conservation. How all of this is integrated into a monitoring plan will take mental energy.

For the October meeting, the group talked about having D. Kubly begin by sharing his experience with Glen Canyon Dam and then talking through an example relevant to the City's HCP effort, such as burrowing owl management, monitoring, and adaptive management. Rich suggested discussing fish species and see what life history elements or habitat elements D. Kubly's team decided to focus on in terms of monitoring efforts. And, it would be interesting to learn how management changed in response to the data collected. Rich referred to Pima County's ecological monitoring program that is being developed and the possible use of broad landscape characteristics as monitoring components. With endangered species, Rich said that this would not be effective because it takes more effort than simply "taking the temperature" of the species every year. With the City's HCP effort, he said that this is why there is interest in measuring burrowing owl productivity. How deep one needs to go with that is a good question because if we can get away with not examining each species so intensely, that would be good. He mentioned the intensity over which the peregrine falcon was monitored after being removed from the endangered species list. Measures of how many eggs were laid, how many hatched, and how many fledged all required around six visits to the nest site. But, the objective was knowing if the species successfully produced young. So, all that was necessary was one visit in the early spring and one in early June for most of the state. If feeding the young that are half-grown, then the assumption is that they fledged. So, he said he doesn't think that this level of intense monitoring is necessary and D. Kubly will help the group come to that point.

Linwood said that it would be good to talk with D. Kubly about what constitutes a successful monitoring plan since many have been disasters. He added that at Brian Powell's (Pima County) recent presentation on the progress of Pima County's ecological monitoring program, they are considering not only landscape-level monitoring, but also species-specific monitoring. He referenced a debate involving two University of Arizona professors about whether or not species-specific monitoring should be the only ecological monitoring approach.

#### Recent and upcoming HCP-related meetings

Jamie reported that Sherry Barrett of USFWS is convening a meeting with staff from Pima County, the Town of Marana, and the City of Tucson (COT) on ecological monitoring.

Jamie reported that he gave a presentation on the subject of the COT's Greater Southlands Habitat Conservation Plan to the COT's Resource Planning Advisory Committee (RPAC) on August 14. The RPAC replaced the role of the HCP Stakeholder Advisory Committee as an official, COT Mayor and Council advisory committee. OCSD staff is soliciting comments on the preliminary draft HCP, especially the conservation program in Chapter 5.

### Climate Change and HCPs

Jamie reported that OCSD convened a follow-up meeting involving faculty from the University of Arizona's CLIMAS, ISPE, Office of Arid Land Studies, and School of Natural Resources, as well as USFWS, the Nature Conservancy, and the Sonoran Institute staff. Guy said that the general sense of the meeting was confusion because of the newness of the subject as it relates to HCPs. Jamie said that, as part of the meeting, he gave a presentation which included the topics of 1) HCPs as they relate to the Endangered Species Act, elements of the preliminary draft Greater Southlands HCP, and the stated difference between changed versus unforeseen circumstances. One topic of the meeting involved the need to develop envelopes of possibility given climate change scenarios and species sensitivities to those scenarios. For example this could involve determining how sensitive Pima pineapple cactus would be to the possibility of shortened winter precipitation seasons versus a longer monsoonal season. Guy said that it will take a long time to establish these envelopes, especially getting those involved to agree on what a shortened winter precipitation season is. He added that it will be time-consuming to get the scientists to agree on the likely scenarios and the number of likely scenarios there needs to be. He said that it would likely be a challenging, protracted process. Jamie said that, given the value of everyone's time and the importance of the information, the discussion concluded with the idea of submitting an application for an ESA section 6 assistance grant. Guy said that to make the process productive and occur in a timely manner, that it will take a dedicated person in charge. So, someone will need to write the grant proposal to get someone to shepherd the process. Guy wondered if a new faculty member at the School of Natural Resources would be interested.

### Other updates

Jamie mentioned that comments from the TAC on the preliminary draft Avra Valley HCP are due on Friday, August 22. Comments will be pasted into a spreadsheet and sent to all TAC members. With regard to the preliminary draft Greater Southlands HCP, the deadline for TAC comment is October 24.

## **4. Discussion**

### Pima Pineapple Cactus: Discuss draft conservation strategy

Jamie said that OCSD staff drafted a framework for a Pima pineapple cactus (PPC) conservation strategy based on both the July TAC meeting discussion and the responses to PPC conservation questions from the group of botanists and others. Rich asked why Mima Falk of the U.S. Fish and Wildlife Service had not attended the TAC meetings in which PPC was discussed. He said that she shares a lot of helpful information about the subject and thinks she should be a part of TAC meetings when PPC is discussed at length.

Jamie said that he recently met with Julia Fonseca of Pima County with regard to some of the TAC's questions about what Pima County is doing in terms of Pima pineapple cactus conservation. Notes from the meeting included the following points:

- “Per Pima County's previous discussions with USFWS several years ago, there is a preference for mitigating impacts in Santa Cruz Valley, Altar impacts in Altar Valley, due to apparent differences in the population demographics.”

- The required 10-year PPC study as part of Swan Southlands is a condition of re-zoning. Talk with Sherry Ruther for specific language on this.
- Humphrey's PPC mitigation bank is intended for privately funded projects. Conservation easements occur incrementally as PPC mitigation credits are purchased.
- Pima County's Madera Highlands mitigation bank in Altar Valley is intended for mitigation of Pima County's public works projects. The Elephant Head mitigation bank (Santa Cruz Valley) is also intended for public works mitigation.
- The entire area of Pima County mitigation banks is protected via conservation easement prior to any mitigation occurring. This is in contrast to incremental mitigation with the private PPC mitigation bank.
- A corridor linking the Altar and Santa Cruz Valleys has been considered important by USFWS staff and PPC experts. Working with these groups, Pima County identified the corridor north of the Sierrita Mountains and a corridor south of the Sierrita Mountains. The one south of the Sierritas has not been surveyed for PPC and may not be viable, so the one north of the Sierritas is considered more important.
- The corridor linking Santa Cruz Valley and Altar Valley may not have a naturally endowed, continuous swath of PPC that occur within a certain pollen dispersal threshold distance. Rather, the objective should be continuous protection or salvage of cacti pollinated by the same pollinator as PPC. This is known to be the solitary, ground nesting bee *Diadasia rinconis*. Plants pollinated by the bee include *Cylindropuntia* spp. of cholla, *Ferrocactus* spp., and *Opuntia* spp."

Rich asked for clarification on who sells mitigation credits as part of Humphrey's PPC mitigation bank. David said that his understanding is that Mr. Humphrey's manages the land and that conservation easements must be placed over a certain sized area of land, not small pieces. Once all of the credits for one "chunk" of land have been exhausted, then another is conserved with an easement. This is because a small piece of habitat does not provide adequate conservation depending on what USFWS determines as the minimum size. There was a question as to whether or not Mr. Humphrey's placed a conservation easement over the entire property at the outset and then is subleasing smaller areas for mitigation banks once credits are purchased. *[Action Item: OCSD staff will get clarification on how private PPC mitigation banks establish conservation easements (i.e., what is the size of land necessary for an easement)].*

Rich asked if the PPC corridor J. Fonseca described to Jamie would overlap with the Greater Southlands HCP planning area. According to the large maps on the wall, Guy said that it looked like the "Backwards L" of the HCP planning area is contiguous with Pima County's PPC corridor. Rich wondered if the southern corridor was known to be viable. Guy said that the answer is unknown. This is why this was a question for Pima County. *[Action Item: OCSD staff clarify why the lands south of the Sierrita Mountains were not surveyed by Pima County as a*

*possible PPC corridor*]. Jamie noted that the southern corridor is part of Pima County's PPC Priority Conservation Area.

Rich asked about the location of R. Humphrey's mitigation bank. David said that it is near where the road curves north of Buenos Aires National Wildlife Refuge in Altar Valley.

With regard to TAC member comments on the draft framework, Rich suggested illustrating the "Backwards L" on a map so that others know what it looks like. Rich also added a question to page 2, which asked: "How significant is connectivity with the Federal lands on the southern portion of the "L" on the Santa Rita Experimental Range?" Jamie said that he wondered how the Santa Rita Experimental Range (SRER) is managed and how that might effect the PPC. Specifically, he noted that cattle graze the SRER and wondered if grazing would adversely impact PPC. Linwood said that cattle grazing would most likely impact the PPC. David said that he believes cattle are grazing within Humphrey's preserve. His understanding is that the impacts from cattle on PPC are uncertain. In considering a southern PPC corridor, David said that the SRER is there and is already protected.

Ries said that he asked B. Schmalzel if having cattle in the same place as PPC is detrimental and Bob said that he didn't think so. Locana said that she saw a bovine kick over a PPC. Guy said that he recalled that cattle were considered a threat in the original PPC listing. However, he didn't know if there have been any recent studies on this except for Chris McDonald's thesis, which addressed the topic coarsely. *[Action Item: OCSD staff will review the original PPC listing to see if cattle were listed as a threat]*. In considering a PPC corridor and "preserve" lands like the Santa Rita Experimental Range, which is actively grazed, Jamie asked the TAC if the botanists and others should provide their opinions about the effects of grazing. Guy said that it is a perfectly good question.

Jamie reviewed the draft PPC conservation strategy. Guy said that, with the second concern listed on page 1 – "The location of a reserve system within the 'Backwards L' does not provide connectivity to the Altar Valley via the Ajo corridor north of the Sierrita Mountains" – that the information received from Pima County about its identification of a corridor north of the Sierritas should be incorporated. Guy asked if Pima County had answered the fifth question on page 2 – "Are there viable east-to-west PPC corridors north of the Sierrita Mountains and, if so, where?" Jamie said that this specific question was not answered, only that those lands had been identified as a possible PPC pollination corridor. Guy said that it sounded like Pima County hoped that the corridor would be viable and this is the area where they had surveyed for the species.

Matt asked what prevented entities from performing PPC surveys on the south side of the Sierrita Mountains. Cat said lack of time and money was a significant constraint. Matt wondered if land ownership was an issue. Cat said that she would ask Mima because she may have had something to do with that decision *[Action Item: USFWS staff will talk internally about the constraints to a PPC corridor on the south side of the Sierrita Mountains and share results with the TAC]*. Rich said that this lack of data on PPC is a good example of where adaptive management would be helpful. He said that as information is gathered on the species and any focused surveys are conducted, the results might affect conservation measures. This is especially true if something

unforeseen happens north of the Sierrita Mountains, making that PPC corridor non-viable. Jamie referred to a map showing lands considered “preserves” by Pima County and noted the location of Canoa Ranch and Rancho Seco preserves in relation to the Greater Southlands HCP Planning Area. Linwood said that EPG, inc. performed some PPC surveys for Pima County on Rancho Seco lands a couple of years ago. He said that they stopped at one point just after entering Rancho Seco and observed a single PPC near the road. However, he and his team surveyed for the rest of the day and did not find any more PPC.

Guy mentioned an idea he had in which border groups that spend many hours in the area with GPS units could be trained to recognize PPC so that they could record and share their location. He said that it would be very easy to double-sample to test reliability. In contrast, it would cost a lot of money to send a trained botanist to the field and there wouldn’t be enough money to pay them for an extensive survey. Guy said that he didn’t know who would coordinate this work with the border groups.

With regard to the question about seed dispersers, Jamie said that it sounded like Pima County was focused on pollinators, not seed dispersers. Cat said that she thinks Mima Falk (USFWS) would agree with Pima County in terms of the greater importance of pollinators versus seed dispersers. Guy said then that the assumption is that dispersal is taken care of. *[Action Item: USFWS staff will ask Mima Falk about the importance of pollinators compared to seed dispersers in terms of PPC conservation]. [Action Item: OCSD staff forward responses from botanists and others regarding PPC conservation to Cat Crawford. This is in response to the discussion about the relative importance of pollinators versus seed dispersers.]*

Jamie continued discussion of the draft PPC conservation framework by reviewing relevant points from the COT’s Native Plant Preservation Ordinance (NPPO). In terms of the plant appraisal methodology, Guy said that the black market would be necessary to put a value on PPC since there is no trade. Otherwise, he doesn’t think that the plant appraisal methodology could be used. Thus, it is probably not a viable methodology as far as PPC is concerned. Ries said that he thought the plant appraisal methodology was based on the cost of buying the plant, planting it, caring for it, and monitoring it, not just the cost of buying a replacement. Linwood said that he hasn’t used this approach in his work. *[Action Item: OCSD staff will inquire to find out if protections for endangered species under the inventory and set-aside methodologies are also part of the plant appraisal methodology] [Action Item: OCSD staff will inquire to find out if the plant appraisal methodology is based on the cost of buying a replacement or the cost of buying the plant, planting it, caring for it, and monitoring it].* Ries said that some success rate factor must also be considered if 100 percent protection of PPC is required.

Hearing no other suggestions or items for discussion, Jamie said that minor changes will be made to the draft framework for a PPC conservation strategy and then it will be distributed to the botanists and others with a conservation interest in PPC for their input. He said that the botanists and others have been invited to attend the September 17 TAC meeting. Chris McDonald is the only person to reply and indicate that he plans to attend.

Rich asked if Pima County vetted their PPC conservation strategy through any professionals. Jamie said that he didn’t know. Cat said that she recalled some meetings that took place a year or

year-and-a-half ago between USFWS and Pima County. Rich suggested that OCSD staff members inquire about this and request any summaries of information that Pima County might have. He said that they might have asked questions that the TAC hadn't thought of. *[Action Item: OCSD staff inquire with Pima County staff on whether or not the PPC strategy was vetted by professionals and if there are any summaries of information that can be shared with the TAC].*

#### Avra Valley Preliminary Draft HCP: Discuss Conservation Program

Jamie asked TAC members if they had any general comments on the May 30, 2008 Preliminary Draft Avra Valley HCP. In his review of the draft, Linwood said that he didn't have any major concerns. Referring to the conservation program in particular, Rich said that the draft was successful in capturing elements of TAC discussions. He added that, after making some minor tweaks, it outlines a strategy that can be effective.

Jamie reviewed the major components of the conservation program, referring to a truncated version created for the meeting packet. He said that the need for flexibility is the overarching theme of the program. Ries concurred and said that some people he works with plan for the community's future water needs on a daily basis, doing so for many years. Yet, given much uncertainty about the future, it is still difficult to determine what will be needed. Therefore, he said that it is important to the Tucson Water Department and the City of Tucson to maintain flexibility. He said that it was flexibility that allowed Tucson Water to build the Central Avra Valley Storage and Recovery Project (CAVSARP), making use of the COT's Colorado River allocation. Ries continued by saying that there are no large projects currently planned. He said that the lands in Avra Valley were purchased for two main reasons: 1) water rights and 2) future water development projects. He said that both CAVSARP and the Southern Avra Valley Storage and Recovery Project (SAVSARP) serve as evaporation-free terminal water storage, adding that no one could have foreseen CAVSARP and SAVSARP eleven-plus years ago.

Given this need for flexibility, Jamie said that the most recent HCP draft requires that mitigation for impacts to Avra Valley HCP Covered Species occur as impacts to the planning area occur, if any. He said that priority mitigation areas were identified, which will be the first lands considered for mitigation should mitigation be required. These lands include the northern block farms (Santa Cruz, Simpson, Hurst, and Martin Farms). The biological corridors that the TAC has identified pass through those lands. In addition, the northern block provides adjacency to the Santa Cruz River, Tucson Audubon Society habitat restoration projects, and burrowing owl hack sites. Another priority mitigation area is the Trust 205 Farm given its adjacency to the Ironwood Forest National Monument. The northern, undisturbed piece of Buckelew Farm was also identified as a priority mitigation area. The biological corridor passes through it and Pima County has identified several adjacent open space acquisition priorities. Finally, Jamie said the riparian areas within the Avra Valley HCP planning area were also identified as priority mitigation lands.

Jamie said that in addition to identifying priority mitigation lands, lands most likely to be developed were also identified. These lands in central Avra Valley are referred to as the CAVSARP Complex. Given considerations such as relative proximity to utility transmission lines and the City limits, these lands are most likely to be developed. Referring to a table in the



meeting packet, Jamie said that if all the lands within the CAVSARP complex were impacted – which is highly unlikely even if development occurs on those properties – there would be adequate mitigation lands available in other parts of the planning area for Covered Species, except for the Tucson shovel-nosed snake. He said that this calculation was based on mitigation ratios and suitable habitat that the TAC oversaw development of. Jamie said that the mitigation and protection strategy is reflected in conservation strategy 1, which is to “Preserve suitable habitat through conservation easement, acquisition, or other mechanism that results in permanent protection, for each covered species for which suitable habitat is impacted by the development of a project covered under this HCP.”

In terms of Conservation Strategy 2, which is to “Develop and maintain Burrowing Owl Management Areas (BOMAs) to mitigate for impacted suitable burrowing owl habitat,” Jamie said that the establishment of up to four Burrowing Owl Management Areas (BOMAs) was discussed by the TAC. With 5,167 acres of total burrowing owl suitable habitat identified within the Avra Valley HCP Planning Area, for each 1,292 acres of impact, a BOMA will be established. Therefore, he said that as soon as any impacts occur within suitable burrowing owl habitat, then a BOMA must be established. Once more than 1,292 acres of burrowing owl habitat have been impacted, a second BOMA must be established.

In terms of BOMA guidelines, Jamie said that the guidelines developed by the Burrowing Owl Working Group are to be followed. This includes locating a BOMA in suitable nesting habitat and identifying the ideal size for a BOMA using adaptive management. However, the initial size will be greater than 12 hectares according to the Burrowing Owl Working Group guidelines. BOMAs should be established away from heavily used roadways and BOMAs should be located where suitable dispersal habitat exists nearby. Jamie mentioned that the Burrowing Owl Working Group identified the Santa Cruz River as a good corridor.

Jamie referred to a mistake in the Preliminary Draft Avra Valley HCP. He said that table 5.2-3 lists a mitigation ratio for the burrowing owl, when it should read “not applicable” given the focus on establishing BOMAs. He asked if this was correct and TAC members agreed. Jamie said that other tables should be corrected as well. *[Action item: OCSD staff correct tables in the May 30 Avra Valley Preliminary Draft HCP, which incorrectly list mitigation acreage for burrowing owls.]*

Rich noted that the mitigation ratios and amount of habitat is the same for the lesser long-nosed bat, cactus ferruginous pygmy-owl (overwintering), and western yellow-billed cuckoo. He said that he questioned the mitigation ratio for lesser long-nosed bat in areas that lacked saguaros. Jamie referred to Chapter 5 of the Preliminary Draft Avra Valley HCP and the justification for the lesser long-nosed bat mitigation ratio. He said that since it is a federally endangered species, it requires a higher degree of habitat protection. He said that it is known to use the Avra Valley planning area to travel between foraging resources and roosting habitat.

Rich asked if habitat identified on maps of aerial orthoimagery was ever groundtruthed such as that for the Tucson shovel-nosed snake. Jamie said that Phil Rosen surveyed the planning area for groundsnake and Tucson shovel-nosed snake. In terms of the riparian habitat, Jamie said he didn’t know if it had been groundtruthed other than the baseline study commissioned by Tucson

Water. Rich said that not groundtruthing the riparian habitat doesn't concern him as these areas could be enhanced or restored.

Cat asked Rich for clarification on his comments about groundtruthing. Rich mentioned the corridor across I-10 on the eastern edge of the Greater Southlands HCP planning area. He mentioned said that Scott Richardson (USFWS) and Dennis Abbate (AGFD) looked at an area to determine if cactus ferruginous pygmy-owls could cross the freeway. Cat said that it sounded like Rich was talking about specific corridor crossings. She said that it goes back to adaptive management when looking at some of the small parcels in Avra Valley. The land use around these parcels may be much different in twenty years. Rich said that that was a good point.

Jamie reviewed the recommended actions for each species as part of Conservation Strategy 3: "The City will implement measures to minimize the likelihood of direct adverse effects (injury or mortality) to all species covered under this HCP." Cat suggested that language be included stating that best management practices for activities (e.g., excavation) shall be used since these change all the time. She used the example of solar facilities, noting that there are best management practices for building towers since these may affect bats. Jamie wondered about the workflow for obtaining the best management practices over the life of the incidental take permit for all activities. He also wondered if these would be vetted by biologists (e.g., Burrowing Owl Working Group members). Guy said that the Arizona Department of Transportation might have these. Cat said that she would create some language to include in the next draft and ask TAC members for comments. *[Action Item: USFWS staff will draft language regarding the use of best management practices for avoiding direct mortality of Covered Species. This language will be shared with TAC members for review and comment].*

With regard to Conservation Strategy 4 – Mitigation areas will be managed to maintain the quality of suitable habitat for all species covered under this HCP – Jamie said that this strategy pertains to issues such as invasive species management, wildlife friendly fencing and site security. With regard to night roosts of lesser long-nosed bat (LLNB), Rich wondered if they could be built to make the bridges more useful as night roosts. He said that LLNB rest between foraging activity. Linwood said that this is true as far as he knows. Amanda said that people have found them hanging from the roofs of their backyard patios. She didn't know if night roosts could be constructed and that, in general, bat boxes are difficult to get bats to use. Rich wondered then if it was useless to construct something for these bats while building a bridge or other structure. Linwood said that that isn't necessarily true as it depends on the bat species and the bridge type and location. He said that Mexican free-tail bats use the expansion joints under some bridges. But, from what we know, PTBB and LLNB do not use bridges as night roosts with any regularity. Jamie said that he confirmed Linwood's last point with Scott Richardson (USFWS) in a meeting the previous week. *[Action Item: OCSD staff distribute notes from Jamie's meeting with Scott Richardson (USFWS) and Marit to the TAC.]*

Jamie asked if there were any additional concerns or questions that TAC members had identified when reviewing Chapter 5 of the Avra Valley Preliminary Draft HCP. No TAC members mentioned any. Jamie said that all comments from TAC review of the preliminary draft Avra Valley HCP will be compiled in a table.

## **5. Upcoming Meetings:**

September 17: Pima pineapple cactus conservation strategy discussion

October 1: Adaptive Management

TAC Meetings were scheduled for December 17, January 21, and February 18 from 1:00 to 4:00 p.m. at the U.S. Fish and Wildlife Service Conference Room (201 N. Bonita, Suite 141).

## **6. Call to the Audience**

Amanda said that she will ask her colleague, Bob Schmalzel, about the PPC propagation and transplant work he has done and will share this information with the TAC. Guy said that he would like to know how long B. Schmalzel has been able to keep the PPC alive after translocating them to a permanent site. Guy suspects that no one has been able to get these PPC to maturity (approximately 8 to 10 years).

With regard to Guy's earlier comment about getting members of border groups to collect PPC location data while performing their activities, Amanda said that B. Schmalzel might have used prison crews on a large property to get an idea of PPC distribution. In terms of getting border groups to do this, Guy said that it would be good to know who would be the point person for this. He wondered if the University of Arizona's former Dean of Sciences would be interested as he has worked with the border groups in the past.

Locana asked about the status of the desert tortoise survey. Jamie said that the COT does not yet have any environmental consultants on contract through OCSD to perform the surveys. Jamie said that negotiations between the COT Procurement Department and the potential awardees took much longer than anticipated. Locana referenced Matt Clark's comment at the last RPAC meeting that the survey should not just focus on species presence and absence, but also habitat indicators. She agreed with his suggestion. Jamie asked for clarification from the TAC on whether or not to edit the request for proposal, for which the TAC had specifically suggested the presence/absence language. Rich said that it would be good to look for habitat indicators (e.g., caliche soils) as part of the survey and not just individual presence and absence. Cat said that this would also help in terms of timing during the year if desert tortoises were hibernating during the time when the survey could be performed. *[Action Item: OCSD staff will revise the draft desert tortoise habitat model groundtruthing RFP].*

## **7. Adjournment**

The meeting was adjourned at 3:30 p.m.

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Summary of Action Items:

- OCSD staff get clarification on how private PPC mitigation banks establish conservation easements (i.e., what is the size of land necessary for an easement);
- OCSD staff clarify why the lands south of the Sierrita Mountains were not surveyed by Pima County as a possible PPC corridor;
- OCSD staff will review the original PPC listing to see if cattle were listed as a threat;
- USFWS staff will talk internally about the constraints to a PPC corridor on the south side of the Sierrita Mountains and share results with the TAC;
- USFWS staff will ask Mima Falk about the importance of pollinators compared to seed dispersers in terms of PPC conservation;
- OCSD staff forward responses from botanists and others regarding PPC conservation to Cat Crawford. This is in response to the discussion about the relative importance of pollinators versus seed dispersers;
- OCSD staff inquire with Pima County staff on whether or not the PPC strategy was vetted by professionals and if there are any summaries of information that can be shared with the TAC;
- OCSD staff correct tables in the May 30 Avra Valley Preliminary Draft HCP, which incorrectly list a mitigation acreage for burrowing owls;
- USFWS staff will draft language regarding the use of best management practices for avoiding direct mortality of Covered Species. This language will be shared with TAC members for review and comment;
- OCSD staff distribute notes from Jamie's meeting with Scott Richardson (USFWS) and Marit to the TAC;
- OCSD staff will revise the draft desert tortoise habitat model groundtruthing RFP.